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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/485,464	02/04/2000	KENJI YAMAMURA	48531	1948

7590 03/03/2004

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EXAMINER	
KASTLER, SCOTT R	
ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 03/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/485,464	YAMAMURA ET AL.	
	Examiner	Art Unit	
	Scott Kastler	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *the appeal brief filed on 11-26-2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 February 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Reopening of Prosecution

In view of the appeal brief filed on 11-26-2003, PROSECUTION IS HEREBY REOPENED. Instant claims 1-4 and 11 are rejected set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al'000 in view of Okita et al. Matsumoto et al'2000 teaches a rolling bearing in which the bearing ring and/or rolling element made of a case hardening steel (see col. 4 line 66 to col. 5 line 2 for example) where it steel is treated by carbonitriding, hardening and tempering (see col. 5 lines 3-4 for example) such that the retained austenite is as low as possible and at least

less than 10%, (thereby including in the disclosed range a retained austenite value of 0%) in order to ensure dimensional stability in the rolling bearing, and the hardness of the rolling contact surface be at least 64 HRC (see col. 2 lines 27-33 for example) where it is specifically stated in Matsumoto et al'000 that the dimensional stability of the bearing is better when the average concentration of the retained austenite present is lower. Matsumoto et al'000 thereby shows all aspects of the above claims except either the specifically recited composition ranges for the steel, or the specific recitation that the retained austenite is maintained at 0% throughout the cross section of the bearing. Okita et al (see claim 3 for example) teaches that case hardening steels meeting both the requirements of Matsumoto et al'000 and overlapping the instantly claimed ranges were known for use as rolling bearings at the time the invention was made. It has been well settled that where, as in the instant case, no new or unexpected result presented in proper declarative or affidavit form, is shown to arise from the use of a claimed value (in the instant case for either of the composition or retained austenite ranges) , motivation to select a particular value or range within that broadly disclosed by the applied prior art would have been a modification obvious to one of ordinary skill in the art at the time the invention was made (see MPEP 2144.05 I). Because Matsumoto et al'000 teaches that case hardening steel may be employed for the rolling bearing disclosed by Matsumoto et al'000, motivation to employ the known case hardening steel, disclosed by Okita et al as useful for rolling bearings, as the case hardening steel alloy required by Matsumoto et al'000 for rolling bearings, where the composition values are of any value within disclosed range of Okita et al, where the values within these ranges are disclosed as equally useful, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made since applicant has not yet

presented any showings, in proper declarative or affidavit form to establish new and/or unexpected results arising from the instantly claimed composition values, all of which are encompassed or overlapped by the values disclosed by Okita et al. With respect to the instantly claimed residual austenite value of 0% throughout the cross section of the rolling element, it is clearly stated in Matsumoto et al'000 that the residual austenite should be maintained at as low a value as possible, with the broadly disclosed lower limit of residual austenite including 0%. Because Matsumoto et al expressly desires to maintain the residual austenite at as low a concentration as possible, motivation to maintain the residual austenite at 0% would have been an optimization that would have been obvious to one of ordinary skill in the art at the time the invention was made, since it has been well settled that motivation to seek an optimal value within a broad range disclosed by the prior art would also have been a modification obvious to one of ordinary skill in the art at the time the invention was made. See MPEP 2144.05 II.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al'000 in view of Okita et al, as applied to claims 1, 2, 4 and 11 above, further in view of Tanaka et al. As applied to claims 1, 2, 4 and 11 above, Matsumoto et al'000 in view of Okita et al shows all aspects of the above claims except the inclusion of a nitriding layer on the rolling bearing member. Tanaka et al discloses (see col. 12, lines 22-26 and lines 40-43 for example) forming a nitride layer on a rolling member at least 2% or less of the diameter of the rolling member in order to prevent adhesion, decreasing friction and improving resistance to fretting damage. Tanaka et al further discloses (see col. 33, lines 40-44 for example) that the nitride layer can be 20 microns and a surface roughness of 0.27 microns, thereby teaching a nitride layer which meets all of the requirements of instant claim 3 except the surface roughness, which

closely approximates the end-point of the range of roughness recited by the above claim. However, it has been well settled that where values in the prior art closely approximate the claimed values (as is the case with respect to the instantly claimed surface roughness values), absent any demonstrated new or unexpected results arising therefrom, a *prima facie* case of obviousness is held to exist. See *Titanium Metals Corp. v. Banner*, (CAFC 1985) 778 F2d 775, 227 USPQ 575. In the instant case, because the advantages afforded by the use of the nitride layer disclosed by Tanaka et al (prevention of adhesion, decreasing friction and improving resistance to fretting damage) would also be desirable in the rolling bearing structure described by Matsumoto et al'000 in view of Okita et al, motivation to include such a nitride layer, where the surface roughness approximates 0.1 microns or less, as taught by Tanaka et al, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made.

Response to Arguments

Applicant's arguments filed in the brief submitted on 11-26-2003 have been fully considered but they are either not persuasive, or moot in view of the above new grounds of rejection. Applicants have presented three major arguments as to why instant claims 1-4 and 11 are not obvious over Matsumoto et al'000 in view of Mitamura, Murakami et al and Tanaka et al:

1. That Matsumoto et al'000 does not teach a single steel alloy composition or range which includes or overlaps all components of the instant claims.

2. That new and unexpected results are obtained through the use of the critical ranges recited in the instant claims when compared to the closest prior art.

3. That the cited references do not expressly disclose or fairly suggest limiting the retained (or residual) austenite to 0% by volume over the entire cross section, and that the surface hardness of the raceway be at least 62 HRC.

The above arguments are either not persuasive or moot for the following reasons.

That Matsumoto et al'000 does not teach a single steel alloy composition or range which includes or overlaps all components of the instant claims.

This argument is convincing to overcome the final rejection mailed on 2-27-2003 since in that rejection, as explained by the applicant, values from different steel samples were combined to form a single "composite" steel alloy not fairly disclosed by Matsumoto et al'000. However, as stated in the new rejection above, Matsumoto et al'000 teaches that case hardening steels commonly employed for rolling bearings may be employed as the steel alloy required by Matsumoto et al'000, and Okita et al teaches a case hardening steel alloy commonly employed for rolling bearings at the time the invention was made which overlaps or encompasses the instantly claimed alloy range.

That new and unexpected results are obtained through the use of the critical ranges recited in the instant claims when compared to the closest prior art.

Applicants argue that the instantly claimed alloy ranges and residual austenite values impart new and unexpected results to the instantly claimed rolling bearing. However, no showing, in proper declarative or affidavit form has yet been presented to support these statements. It has been well settled that arguments and conclusory statements alone, are not sufficient to establish new and/or unexpected results. See *In re Wood et al*, 199 USPQ 137. It should be noted however, as stated in the above rejections, that proper presentation of such

results showing that the composition ranges of the instant claims impart new and/or unexpected results when compared with the composition ranges of the prior art and/or that the composition ranges recited by the applied prior art make it impossible to achieve a residual austenite value of 0% (see the next section) would be sufficient to overcome all of the instant rejections.

That the cited references do not expressly disclose or fairly suggest limiting the retained (or residual) austenite to 0% by volume over the entire cross section, and that the surface hardness of the raceway be at least 62 HRC.

As stated in the above rejection, Matsumoto et al specifically desires as little residual austenite as possible, thereby including 0% residual austenite in the disclosed range of permissible residual austenite values, and in fact, making 0% residual austenite the optimal desired value of residual austenite in Matsumoto et al'000. Applicant's further argument that Matsumoto et al does not specifically disclose residual austenite values below about 5% by vol. is not persuasive because it is well settled that prior art is not limited to it's specific examples, but rather is prior art for all that it fairly discloses. See MPEP 2123. Again, a properly presented showing by the applicant that the rolling bearings of Matsumoto et al'000 are incapable of achieving a 0% residual austenite value would overcome the instant rejections. As stated in the above rejections, Matsumoto et al'000 specifically requires that the raceway hardness be above 62 HRC (64 HRC as stated at col. 2 lines 27-37 for example).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Kastler whose telephone number is (571) 272-1243. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Scott Kastler
Primary Examiner
Art Unit 1742

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